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The Relation of Secondary Student's Career Choice Readiness to a Six-Phase Model of Career Decision-Making

Andreas Hirschi[1,a]

&

Damian Läge[1,b]

[1] University of Zurich, Department of Psychology

[a] Corresponding author
Correspondence concerning this article should be addressed to Andreas Hirschi, Leuphana Universität Lüneburg, Institute for Strategic HR Management Research and Development (SMARD), Wilschenbrucher Weg 84, D-21335 Lüneburg, Germany, Phone +49 4131 6 777 776, Fax +49 4131 6 777 935, Email: andreas.hirschi@leuphana.de

[b] E-Mail: d.laege@psychologie.unizh.ch

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Abstract

Based on common aspects of recent models of career decision-making (CDM) a six-phase model of CDM for secondary students is presented and empirically evaluated. The study tested the hypothesis that students who are in later phases possess more career choice readiness and consider different numbers of career alternatives. 266 Swiss secondary students completed measures tapping phase of CDM, career choice readiness, and number of considered career options. Career choice readiness showed an increase with phase of CDM. Later phases were generally associated with a larger increase in career choice readiness. Number of considered career options showed a curve-linear development with fewer options considered at the beginning and at the end of the process. Male students showed a larger variability in their distribution among the process with more male than female students in the first and last phase of the process. Implications for theory and practice are presented.

Key words: career decision-making, career choice readiness, counseling goals, career development, career maturity

Within the career development literature the career decision-making process of students received much theoretical and empirical attention (e.g., cf. Phillips & Jome, 2005, for an overview). Among the most prominent topics are models which describe the career decision-making process (cf. Brown, 1990). Almost every model proposes that the career decision-making process occurs in a series of predefined phases, although they might name different steps for the process (Gati, Shenhav, & Givon, 1993; Peterson, Sampson, & Reardon, 1991). This is also true for some of the most recent models of career decision-making. The Cognitive Information Processing (CIP) Approach (Peterson et al., 1991; Sampson, Reardon, Peterson, & Lenz, 2004) proposes that career decision-making occurs in a cycle of five distinguishable phases which are presented in the CASVE-Cycle of career decision-making: (1) Communication (identifying a career problem), (2) Analysis (interrelating problem components), (3) Synthesis (creating likely alternatives), (4) Valuing (prioritizing alternatives), and (5) Execution (forming strategies to implement the choice). The process finally ends again in the Communication phase to determine whether the career decision-making problem has been solved. The Prescreening, In-Depth Exploration, and Choice (PIC) model by Gati and colleagues (Gati, 1986; Gati & Asher, 2001) distinguishes between the three phases of (1) pre-screening where potential alternatives are reduced to a manageable set of promising alternatives based o the individual's preferences, (2) in-depth exploration of the promising alternatives, and (3) choice of the most suitable alternative. The career decision-making model proposed by Germeijs and Verschueren (2006) distinguishes six basic tasks in the process: (1) orientation to choice, (2) self-exploration, (3) broad exploration of the environment, (4) in-depth exploration of the environment, (5) choosing an alternative, and (6) committing to a particular career alternative. Another recent model was proposed by Esbroeck, Tibos, and Zaman (2005). In their dynamic model of career choice development they propose six career choice development activities: (1) sensitisation

(becoming aware of required career choice activities), (2) exploration of the self, (3) environmental exploration, (4) exploration of the relationship between the self and the environment, (5) specification (deepening knowledge of career options and specifying choices), and (6) decision for an alternative. Empirical research with these models basically confirms their validity and utility for career development (Gati & Asher, 2001; Germeijs & Verschueren, 2006; Tibos & van Esbroeck, 2003, September).

An Unifying Six-Phase Model of Career Decision-Making

While the above presented models show considerable overlap in their proposed phases they also differ in the exact number of phases, their specific contents, and names. In an attempt to propose an unifying model we identified six common basic phases in the career decision-making process that can be extracted from these models: (1) becoming concerned about career decision-making (awareness), (2) generating possible career alternatives based on one's own interests, skills, and values through self- and environmental exploration, (3) reducing the career alternatives to a manageable number for more in-depth exploration, (4) deciding among few alternatives, (5) confirming one's choice and building a commitment to it, and (6) being firmly decided and committed to a choice. These six phases are presented in our six-phase model of career decision-making in Figure 1. Basically, we regard our model not as a new concept for career decision-making but as a model which integrates the most basic phases of several prominent models in career decision-making. An empirical evaluation of this model could thus also provide useful reference for several other career decision-making models.

[Enter Figure 1 about here]

Our assumption that phases (2) to (5) mark core aspects within the career decision-making process is also supported by the findings from Brown and colleagues (Brown & McPartland, 2005; Miller & Brown, 2005). They have proposed that at least four different problems in career decision-making can be identified which lead to different counseling goals for clients: (a) clients who want to expand their career options, (b) clients who want to reduce an overwhelming number of options, (c) clients who need assistance in deciding between a few viable options, and (d) clients who seek confirmation of an already chosen option (Brown & McPartland, 2005; Miller & Brown, 2005). These problems exactly correspond to the four phases in our model.

Phase (1) and (6) occur prior respectively after the actual decision-making process and thus might not be directly considered as phases in career decision-making. They therefore also do not correspond to actual counseling goals. However, we believe that they represent important states in the whole process. For example, the need to become aware of the demands and necessity of the career decision-making process is regarded as an important first step in career decision-making by several models (e.g., Germeijs & Verschueren, 2006; Peterson et al., 1991; Savickas, 2000; Van Esbroeck et al., 2005). It therefore seems important to distinguish between students who never actually became concerned with career decision-making in the first place from students who are concerned with the process but have few ideas because they were not yet able to expand their career options (e.g., because of lack of self- and/or environmental knowledge). On the other hand, it also seems important to distinguish between students who feel that they have finished the process and made their final choice from students who also made a choice but are still in need of final confirmation.

Career Decision-Making and Career Choice Readiness

An important construct in the context of career decision-making is career choice readiness. In accordance to Super (1990) and Savickas (1984, 2001) we define career choice readiness as the readiness and ability of a person to successfully engage in the career decision-making process and reach a well-founded career decision. Several models of career choice readiness exist that propose different core constructs of the concept (e.g., cf. Patton & Creed, 2001; Raskin, 1998, for recent reviews). Based on theoretical and empirical research, in the current study we operationalize career choice readiness by four core aspects:

(1) *Career decidedness*: research shows that a feeling of decidedness and commitment to a career choice is an important facet of overall career choice readiness (e.g., Creed, Prideaux, & Patton, 2005; Powell & Luzzo, 1998; Savickas, 1984; Seifert & Stangl, 1986). Other studies showed that students with higher career decidedness also suffer less from problems in career decision-making, are more certain of their own abilities, and are more active in applying for an apprenticeship after school (Seifert, 1983, 1993), (2) *career planning*: according to Savickas (1997, 1999) planfulness is one of the most basic components of career choice readiness. Research also confirms the close connection of career planning to career choice readiness development or realization of one's career options (Creed et al., 2005; Savickas, Silling, & Schwartz, 1984; Seifert, 1993), (3) *career exploration*: within the present study career exploration refers to the degree of environmental exploration, both broad and more in-depth. Blustein (1997; Flum & Blustein, 2000) regards the ability and readiness to career exploration as a fundamental competence for today's career development. Empirical research confirms that a broad exploration of one's career possibilities in adolescence can have positive implications on later career adaptation (Blustein, Phillips, Jobin-Davis, Finkelberg, & Roarke, 1997; Jepsen & Dickson, 2003; Phillips, 1982). Active career exploration can also be important for a congruent career choice (Grotevant, Cooper, &

Kramer, 1986), (4) *vocational identity*: according to Holland (1997) vocational identity describes „… the clear and stable picture of one's goals, interests, and talents" (p. 5). Research showed that vocational identity development corresponds to overall progress in the career decision-making process (Savickas, 1985). In contrast, low identity was found to be connected with undecidedness (Lucas, Gysbers, Buescher, & Heppner, 1988) or even more fundamental personality problems such as low emotional stability (Saunders, Peterson, Sampson, & Reardon, 2000).

In another study Hirschi and Werlen Lutz (submitted) showed that each of these four measures and their combined values are strong predictors of success for Swiss adolescents in finding an apprenticeship after school. Thus, we believe that these four aspects of career choice readiness can be regarded as fundamental for the career decision-making process of adolescents.

In fact, previous studies showed that progress in career decision-making indeed corresponds to an increase in career choice readiness (e.g. Blustein, 1988; Creed & Patton, 2003; Creed et al., 2005). Basically, these studies could prove that becoming more decided and committed towards a choice corresponds to an increase in career choice readiness. Regarding our proposed six-phase model of the career decision-making process, it should therefore be expected that students who are in a latter phase of the process also show more career choice readiness. However, none of these studies examined whether students who are in different phases of the process also systematically differ in their degree of readiness. In order to test whether the six-phases in our model are meaningful distinctions within the process, a direct analysis of the different degrees of career choice readiness for students in different phases is required.

Hypotheses

We assume that students in the proposed six different phases of the career decision-making process also systematically vary in their degree of career choice readiness and the number of considered career options. We further assume that students in latter phases show more career choice readiness. Specifically, they are expected to show more career decidedness, show more career planning, and show a higher vocational identity. As explained above, career exploration is used as both broad and in-depth environmental exploration in the current study. As such, it plays an important role in every phase of the process. We therefore also expect a linear increase in this variable over the six phases. In contrast, we expect the number of considered career options by students to show a curve-linear development. As our model implies, within phases one to three students should enhance their considered career options through self- and environmental exploration. When they are in phase three they should have a considerable number of possible options. They now face the task of reducing these options, which should lead to a decline in considered career options in phase four through phase six. We therefore assume that the number of considered career options increase until phase three and decline afterwards until phase six.

Different research has shown that the career development and degree of career choice readiness between male and female students can differ (e.g., Creed & Patton, 2003; Creed et al., 2005). We therefore assume that male and female students (1) show different levels of career choice readiness, (2) differ in their distribution among the career decision-making phases, and (3) are in a different average state of the career decision-making process. However, because of the lacking uniformity of the existing research results, we do not propose a directed hypothesis.

Method

Subjects

The 266 participating students came from 4 schools districts and 16 different school classes. All were secondary students near the end of grade seven from the Canton of St.Gallen, Switzerland. The sample consisted of 132 females (49.6 percent) and 134 males. 220 students (82.7 percent) were Swiss nationals, the others had other nationalities, mostly from south-eastern Europe. They ranged from age 12 to 16 (M = 14.05, SD = 0.69). While the majority is 14 years old (60.5 percent), there is still a considerable range of age despite the fact that all participating students are in the same grade. The reason for these differences is partly because in the Swiss school system some students attend school one year earlier or later than normally expected depending on their state of cognitive and social development. Another reason is that some students have to repeat one year of school if they don't produce sufficient grades to advance to the next degree.

Much like in Germany, in the Swiss education system approximately two-third of the students start a vocational education after grade nine. In doing so, they have to decide which of over 200 kinds of vocational apprenticeships they would like to pursue and start sending applications to private firms at the beginning of grade nine. The system functions much like an ordinary job market for adults, where offers and inquiries on apprenticeships have to meet (for more information on the Swiss education system see http://www.educa.ch). Thus, for these students career decision-making is an imminent task to be mastered. We believe that students in grade seven are an especially interesting group for career development research in Switzerland. Since the official school curriculum places career education in grade eight, students in seventh grade are often neglected. They do not receive formal career education in school and are not allowed to receive individual career counseling as it is restricted to students in the eighth and ninth grade. However, as is well documented from different research (e.g.,

cf. Hartung, Porfeli, & Vondracek, 2005; Watson & McMahon, 2005), career development starts already in childhood. Thus, to examine the state of career development of students in seventh grade prior to the official start of career decision-making seems especially interesting and could have important practical implications on career education in school starting in grade eight.

Measures

Demographic Survey.

As a demographic survey, students where asked to indicate on the first page of the questionnaire their gender, age, and nationality (Swiss or other).

Career choice readiness.

We measured career choice readiness with four scales. Because each scale consists of different numbers of items, we took the mean-score of the scale as its value to make them more comparable. The mean-score is calculated by dividing the sum-score for the scale by its respective number of items. Means, standard deviations, and intercorrelations for these measures are presented in Table 1.

Career decidedness. We measured career decidedness with the respective scale of the German adaptation of the *Career Maturity Inventory* (Crites, 1973; Seifert & Stangl, 1986). The scale consists of 12 items (e.g. "I don't know exactly what to do in order to choose the right occupation"). Responses are indicated on a four-point scale ranging from "not agree at all" to "totally agree". Several studies by the authors of the scale and others present evidence for content and criterion validity. For example, they could show that the scale shows positive correlations to other aspects of career maturity such as independence of career choice,

engagement in the career decision-making process, positive attitudes towards career decision-making, and more knowledge of the world of work (Seifert & Stangl, 1986). Other studies proved that students with higher career decidedness on this measure are more active in applying for an apprenticeship after school, are more successful in actually finding an apprenticeship, or are more likely to realize their aspired major in university (Bergmann, 1993; Hirschi & Werlen Lutz, submitted; Seifert, 1983, 1993; Seifert, Bergmann, & Eder, 1987) . To make this scale better comparable to the other five-point scales, we linearly transformed the scale-scores to a five-point scale. Calculated as the mean score, the scales rank from 1 to 5 points with higher values indicating more decidedness and commitment towards a career choice. The internal reliability (Cronbach) for this scale in the present study was .86.

Career planning. The construct was measured using the respective scale from the German adaptation of the *Career Development Inventory* (Seifert & Eder, 1985; Super, Thompson, Lindeman, Jordaan, & Myers, 1981). The 22-item scale measures career planning attitudes in three parts, asking students to indicate on a five-point scale how much they have thought about different activities concerning their career choice (9 items, ranging from (1) “not at all” to (5) “a lot, I already have very concrete plans”), how much time they have invested in thinking about career relevant questions in comparison to their classmates (5 items, ranging from (1) “much less than average” to (5) “much more than average”), and how much they know about their preferred occupation in terms of specific characteristics, for example, which abilities are required in this occupation (8 items, ranging from (1) “hardly any knowledge” to (5) “very clear knowledge”). Different studies have shown the content and criterion validity of this scale. For example, the scale correlates positively with career decidedness, career exploration, or knowledge about the world of work (Seifert & Eder, 1985;

Seifert & Stangl, 1986). Other studies showed that students with higher scores on this measure are, for example, more likely to obtain an apprenticeship after school (Hirschi & Werlen Lutz, submitted; Seifert, 1993; Seifert et al., 1987; Seifert & Eder, 1985, 1991). Since we calculated the mean score, this scale also ranks from 1 to 5 with higher scores indicating more engagement in career planning. The internal reliability (Cronbach) in our sample was . 90.

Career exploration. To measure the degree of career exploration we used the respective scale from the German adaptation of the *Career Development Inventory* (Seifert & Eder, 1985; Super et al., 1981). The scale is divided in two parts. Part one (13 items) asks students to indicate, whether they would consult different sources of information for their career development (e.g. my father, my teacher, job-shadowing). Answers can be given on a five-point scale ranging from "never" to "certainly". Part two (13 items) asks how much useful information they have already obtained from these sources. Answers are indicated on a five-point scale with end points of "none" to "very much". As for the career planning scale, several studies confirmed the content and criterion validity of this scale, for example, its positive correlations with career decidedness, knowledge about the world of work, or success in finding an apprenticeship (Hirschi & Werlen Lutz, submitted; Seifert, 1993; Seifert et al., 1987; Seifert & Eder, 1985, 1991). In our study we took the mean score of the scale ranking from 1 to 5 with higher scores indicating more positive attitudes towards environmental career exploration and a higher degree of already conducted environmental career exploration. The internal reliability (Cronbach) in the present study was .85.

Vocational identity. We measured the degree of vocational identity using a German adaptation of the *My Vocational Situation Scale* (Holland, Daiger, & Power, 1980; Jörin,

Stoll, Bergmann, & Eder, 2004). The scale consists of ten items. Students could indicate on a five-point scale how much the different statements (e.g. “I’m not sure yet which occupations I could perform successfully”) resemble their personal situation ranking from (1) “not at all” to (5) “completely”. Hirschi and Werlen Lutz (submitted) provided positive evidence for the content and criterion validity of this scale. They could show that the scale shows positive correlations to career decidedness, career planning, and career exploration. Students with higher scores on this measure were also more likely to find an apprenticeship after school and were better able to realize their original career aspiration. In our study, we calculated the mean score for the scales which ranks from 1 to 5 with higher scores indicating a more developed vocational identity. The internal reliability (Cronbach) in the current sample was . 82.

Total career choice readiness. Since all four career choice readiness scales presented above show meaningful relations to each other (cf. Table 1), we also calculated a total career choice readiness scale based on their mean values. This scale allows an easy estimate of the overall degree of career choice readiness of a given student. We built the scale by calculating the mean-score of the four scales: career decidedness, career planning, career exploration, and vocational identity. Since we took the mean score ranking from 1 to 5 of each scale, each of the four scales adds exactly one-fourth to the total career choice readiness scale. The total career choice readiness scale also ranks from 1 to 5 with high scores indicating high overall career choice readiness. The reliability (Cronbach) was .93.

Number of considered career options.

To measure the number of concrete career options a student is considering, we asked the students to list all occupations which they are currently considering pursuing after finishing school. The students in our sample named between 0 and 9 concrete career options.

Phase of career decision-making.

Recently, there have been attempts in the literature to develop measures for the state in the career decision-making process of adolescents based on career decision-making models (Germeijs & Verschueren, 2006; Tibos & van Esbroeck, 2003, September). These measures are supposed to indicate the degree of career development according to different phases in a career decision-making model. However, it proved to be very difficult to clearly distinguish students in different phases of the process according to these measures, and they still need to be considered as being in their developmental state. We therefore refrained from using one of these measures – also because none of them is available in German language. Instead, we decided to use a more simple approach to measure the state of career decision-making. Inspired by the observation from Brown and colleagues (Brown & McPartland, 2005; Miller & Brown, 2005) that different career decision-making problems result in different counseling goals, we conducted a statement for a typical problem that clients face when they start engaging a certain phase. Each student was presented the following statements: (a) “I have never really thought about my vocational future” (engaging phase one), (b) “I don’t know much about my options and have few ideas concerning my vocational future” (engaging phase two), (c) “There are so many interesting career options that I don’t know which would be best suited for me” (engaging phase three), (d) “I’m considering a few concrete career options but am unable to choose among them” (engaging phase four), (e) “I have already decided for a certain career option but I’m not completely sure yet” (engaging phase five),

and (f) “I already know exactly what I want to do in the future” (phase six). The questionnaire asked students to choose the one description among the six that best resembles their current situation and to put a mark (X) next to it. Students indicating a certain statement are expected to engage in the respective phase and have completed prior phases. For example, a student who is not yet concerned with career decision-making (item (a)) should engage in phase one and become concerned about the process. Instead, a student who states that he or she does not have any ideas about possible career options (item (b)) is expected to have completed phase one and should now engage in phase two by generating possible alternatives. An exception to this rule is phase six which actually indicates a state rather than a process.

Gati and colleagues (Gati, Kleiman, Saka, & Zakai, 2003; Gati, Saka, & Krausz, 2001) used a very similar methological approach to measure the degree of decidedness in their study. Their participants could choose which of five descriptions best described their current state in the career decision-making process. However, since we wanted to measure in which phase students are according to our proposed model, we could not directly apply their measure with different phases for our study. Our applied measure allows to clearly match each student to a specific phase in the process which is essential for our analysis. Another advantage of this measure is its high practical utility because it can easily be used in an actual career counseling session to estimate the current state in the career decision-making process of a given client.

Based on this measure we also calculated an ordinal scale for the phase of career decision-making ranking from 1 to 6 with one representing the earliest and six the last and most advanced phase in the career decision-making process.

Procedure

A few weeks prior to the data collection, all teachers where contacted by the first author and asked whether they would participate in the study with their classes. Information about the general purpose of the study was provided to the teachers and the students who also received a special information sheet for their parents. All teachers agreed to participate in the study. All students who where present at the lesson of data collection filled out the survey pack during an ordinary school lesson in their classes. The first author or the students' classroom teacher surveyed the administration of the questionnaires. All participants filled out the complete questionnaire. Two students did not completely fill out the career exploration scale. For them, this scale was excluded from the analysis and the total career choice readiness scale was not calculated for these two students.

[Enter Table 1 about here]

Results

Phase of Career Decision-Making and Career Choice Readiness

In order to test our hypothesis that students in a more advanced phase in the career decision-making process also show a higher state of career choice readiness we calculated the correlation between the ordinal phase of the career decision-making scale and the five indices for career choice readiness (see Table 1). The results show that students who are in a more advanced phase of career decision-making also show higher career choice readiness on all five measured indices. However, phase of career decision-making and career exploration showed only a very weak correlation.

To evaluate whether students in different phases of the career decision-making process also differ significantly in their career choice readiness, we calculated a gender by phase MANOVA with career decidedness, career planning, career exploration, and vocational identity as dependent variables. This analysis also allows evaluating possible interactions between gender and phase in career decision-making. The results show that the dependent variables differ significantly between career decision-making phase ($F(20, 250) = 6.43$, $p < .000$). The analysis for gender ($F(4, 250) = 0.96$, n.s.) and for the interaction of gender and phase ($F(20, 250) = 1.27$, n.s.) where not significant. We also calculated a gender by phase ANOVA for the dependent variable total career choice readiness. This variable also differs significantly between phases ($F(5, 23.6) = 30.69$, $p < .000$) but not between gender ($F(1, 0.05) = 0.31$, n.s.). There is also no significant interaction between gender and phase for total career choice readiness ($F(5, 0.60) = 0.78$, n.s.).

To get a complete picture of the differences between the single phases, we used one-sided parametric t-tests to compare students in conjunctive phases on each single variable. We also calculated Cohen's (1969) *d* as a measure of effect size in order to give a value for the practical significance of the differences. Figure 2 gives an illustration of the values of the measured variables across the six phases.

[Enter Figure 2 about here]

[Enter Table 2 about here]

The results in Table 2 show that students in phase two, with the exception of higher values in career exploration, did not show a significantly higher degree on career choice readiness than students in phase one. As expected, for the other phases in career decision-

making, students in later phases of career decision-making also showed more career choice readiness than students in earlier phases. A notable exception to this finding is the scale of career exploration. Except for the significantly higher degree of students in phase two compared to those in phase one, no other comparison revealed significant differences on this scale. Two other deviations from the general findings are that students in phase three did not report statistically significant more career decidedness that students in phase two and that students in phase six did not report significantly higher career planning than students in five. Apart from these exceptions, our hypothesis that students in later stages of the career decision-making process also show more career choice readiness regarding their career decidedness, career planning, vocational identity, and total career choice readiness could generally be confirmed. The hypothesis regarding the factor of career exploration could not be confirmed. Another notable finding is that the increase in career choice readiness is not linear between phase one to six, as can be seen by the respective effect-sizes for total career choice readiness. Except from the difference between phase four and five, the effect-sizes for total career choice readiness show a linear increase from phase one to phase six, with a remarkably large difference between students in phase five and six.

Phase of Career Decision-Making and Number of Considered Career Options

A gender by situation ANOVA was calculated for the dependent variable number of considered career options to test the hypotheses that students in different phases consider different numbers of career options while controlling for possible gender influences. As expected, this variable differs significantly between phases ($F(5, 61.22) = 5.56$, $p < .000$) but not gender ($F(1, 3.13) = 1.42$, n.s.), and there is no interaction between phase and gender ($F(5, 10.90) = 0.99$, n.s.). The number of considered career options was compared with parametric t-test between students in conjunctive phases as presented in Table 2.

Table 2 and Figure 2 show that students in different phases of their career decision-making process consider different numbers of career alternatives. The number of career options shows a curve-linear development across the six phases. Our hypothesis can therefore be confirmed. Contrary to our expectation, however, students in phase two did not consider more alternatives than students in phase one. Furthermore, the number of considered career options increased significantly from phase two to four and declined from phase four to six. This was contrary to our hypothesis that career options would only increase until phase three and decline afterwards.

Gender Differences

Career choice readiness and considered career options

As already shown above, the multivariate analyses of variance did not show any significant differences on the dependent variables between male and female students. To get a more detailed analysis we also used two-sided parametric t-tests to compare all male and female students on their number of concrete career options, career decidedness, career planning, career exploration, vocational identity, and total career choice readiness. Of all these measures only one significant difference between male and female students occurred. Females considered, on average, more career options than males (females $M = 2.66$, $SD = 1.34$; males $M = 2.18$, $SD = 1.72$, $t(264) = 2.539$, $p < .05$, $d = 0.31$). Generally, our hypothesis that students of different gender differ in their career choice readiness could therefore not be confirmed. Also, the rather small difference in considered career options might be explained by the fact that women in general produce more elements in verbal free-listing tasks (cf. Halpern, 2000). Male students also had a higher standard deviation than females despite their smaller average number of career options. This means that male students showed a higher variability in their number of considered career options. Indeed, quite a

number of male students considered none or only one career option (39.6 percent vs. 16.7 percent of female students), while about the same percentage of male and female students considered five or more career options (8.2 percent male, 8.3 percent female). The gender difference could thus be explained by the fact that many more male students have almost no concrete options, while female and male students with many options are about the same in number.

Phase of career decision-making.

To compare the distribution of male and female students across the six phases of career decision-making (see Table 3), we compared the two groups using a one-dimensional Chi-Square Test. Results show that the distribution among male and female students differs significantly ($\chi^2(5) = 121.8$, $p < .000$).

[Enter Table 3 about here]

In particular, the different distribution between male and female students in phase one and two as well as between phase five and six is remarkable. A much larger percentage of male (14.2 percent) than female (4.5 percent) students declared that they are in phase one of the career decision-making process, whereas more female (20.5 percent) than male (10.4 percent) students are in phase two. The same is true for phase five, where many more female (35.6 percent) than male (26.1 percent) students categorize themselves, whereas many more male (14.2 percent) than female (2.3 percent) students are in phase six. To evaluate whether these differences actually reflect different degrees of career choice readiness or are merely due to different labeling for the same basic situation, we compared the career choice readiness of males in phase one with the career choice readiness of females in phase two with

parametric t-tests. We did the same comparison between males in phase six and females in phase five. The results show that female students in phase two only differ in their degree of career exploration from male students in phase one (career exploration scale females phase two (N = 27), $M = 3.03$, $SD = 0.60$; males phase one (N = 19) $M = 2.61$, $SD = 0.56$, $t(44) = 2.40$, $p < .05$, $d = 0.79$). All other measures did not show significant differences. We also compared boys in phase one to boys in phase two with parametric t-tests. No significant differences emerged on any of the six variables. Since only six girls are in phase one, no such comparison was possible between girls only.

Female students in phase five, however, reported significantly lower levels on several measures of career choice readiness compared to male students in phase six: career decidedness (males phase six (N = 19) $M = 3.99$, $SD = 0.48$ vs. females phase five (N = 47) $M = 3.61$, $SD = 0.57$; $t(64) = 2.61$, $p < .05$, $d = 0.69$), vocational identity (males phase six $M = 4.15$, $SD = 0.63$ vs. females phase five $M = 3.60$, $SD = 0.64$; $t(64) = 3.174$, $p < .01$, $d = 0.74$), and total career choice readiness (males phase six $M = 3.66$, $SD = 0.37$ vs. females phase five $M = 3.40$, $SD = 0.42$; $t(64) = 2.32$, $p < .05$, $d = 0.51$). They also reported more concrete career options (females phase five $M = 2.83$, $SD = 1.07$; males phase six $M = 1.84$, $SD = 1.26$, $t(64) = 3.23$, $p < .01$, $d = 0.63$). As expected, the comparison between male students in phase five to those in phase six revealed higher values for students in phase six in all dependent variables. Specifically, they scored significantly higher in career decidedness (phase six (N = 19) $M = 3.99$, $SD = 0.48$ vs. phase five (N = 35) $M = 3.70$, $SD = 0.55$; $t(52) = 1.97$, $p < .05$, $d = 0.53$), vocational identity ($M = 4.15$, $SD = 0.63$ vs. $M = 3.62$, $SD = 0.56$; $t(52) = 3.15$, $p < .01$, $d = 0.72$), and total career choice readiness ($M = 3.66$, $SD = 0.37$ vs. $M = 3.41$, $SD = 0.41$; $t(52) = 2.18$, $p < .05$, $d = 0.49$). The differences in considered career options ($M = 1.84$, $SD = 1.26$ vs. $M = 2.43$, $SD = -1.31$, $t(52) = 1.59$, n.s., $d = -0.38$) and career planning ($M = 3.36$, $SD = 0.58$ vs. $M = 3.18$, $SD = 0.52$, $t(52) = 1.14$,

n.s., $d = 0.29$) where not significant, however. Since only three female students where in phase six no such comparisons between female students was possible.

As shown above, the distinction in career choice readiness and considered career options between phase one and phase two could not be confirmed for our subjects in general. Thus, the reason that more girls are in phase two than in phase one compared to boys might primarily be due to different labeling of the same situation. Boys in phase six, however, indeed reported higher levels of career choice readiness than girls in phase five. Our hypothesis that male and female students show a different distribution among the six phases of career decision-making can therefore be confirmed.

To evaluate whether male and female students differ in their average phase of career decision-making, we compared male and female students according to their score on the phase of career decision-making scale. The non-parametric Mann-Whitney U-Test did not show a significant difference between the two genders ($U = 8559.5$, $p = .642$). Our hypothesis that male and female students differ in their average phase of career decision-making could therefore not be confirmed.

Discussion

Based on several current models of career decision-making (Gati & Asher, 2001; Germeijs & Verschueren, 2006; Peterson et al., 1991; Van Esbroeck et al., 2005) and incorporating the four different basic career decision-making problems identified by Brown and colleagues (Brown & McPartland, 2005; Miller & Brown, 2005), we proposed a sequential six-phase model of the career decision-making process. Our study explored whether Swiss secondary school students who are in different phases of their career decision-making process according to this model also possess different degrees of career choice

readiness and consider different numbers of career alternatives. Based on theoretical and empirical research, we operationalized career choice readiness with four core aspects: career decidedness, career planning, career exploration, and vocational identity. Based on these four scales a total career choice readiness scale was derived to provide a simple measure for the overall career choice readiness of a student. As our results show, phase in career decision-making shows meaningful relations to career choice readiness and number of considered career options.

Phase of Career Decision-Making and Career Choice Readiness

As expected, students in latter phases did show higher levels of career choice readiness. The number of considered career options showed a curve-linear development across the six phases, with fewer options reported in the early and late phases of the process. Only the distinction between phase one and phase two did not show the expected results. Except for career exploration, students in phase two did not show more career choice readiness on any measure and did not consider more career alternatives. While the lack of differences is contrary to our expectations, they still seem plausible. Phase one is located prior to the actual career decision-making process. The main purpose of this phase according to our model is to become aware of the need to make a career choice prior to actually engaging in it. Students classified in phase two are expected to have completed phase one and now start to engage in the actual process by identifying different career possibilities. However, as our results imply, the fact that they are concerned with career decision-making does not mean that these students show more career planning or are more decided or clear about their vocational identity. They also do not yet consider more concrete career options. However, they differ from their colleagues in the way that they already collected some information about possible careers from different sources. While a distinction between phase one and two makes

conceptual sense according to numerous models of career decision-making (e.g., cf. Germeijs & Verschueren, 2006; Savickas, 2000) this implies that they might actually not be easily distinguishable phases in practice. One could also reason that even in grade seven all students are at least remotely aware of the future need of a career choice. Hence, the distinction between students who have few ideas about their vocational future because they never got concerned with the process to those who have thought about career decision-making but also have few ideas might also be arbitrary.

As for the phases two to six we could show that an increase in the career decision-making process does indeed correlate significantly with an increase in career choice readiness. More specifically, students in conjunctive phases showed significant differences in their career choice readiness, with students in a higher phase having a higher readiness. Although progress in the career decision-making process was weak but significantly associated with more career exploration, students in conjunctive decision-making phases did not show significant differences in this measure. This result implies that for secondary students at the beginning of their career decision-making process, progress in career decision-making is mainly accompanied by becoming clearer about their own interests, talents, and values, becoming more decided and making more plans regarding the career choice. Exploring the world of work and requiring information about occupations does not seem to be as important in this process.

Looking at the differences in total career choice readiness between students in conjunctive career decision-making phases, our results showed that the differences between the six phases basically increase from phase one to six. The biggest difference is between students in phase five to those in phase six. This implies that being firmly decided and committed to a choice (phase six) is very different from knowing what to do but not being completely sure yet (phase five) regarding the degree of career choice readiness. Although our

study was cross-sectional and can therefore not directly observe this process, another implication of this finding could be that progress from phase five to phase six requires more advancement in total career choice readiness than moving from phase three to four or from phase four to phase five. This might also mean that different steps in the career decision-making process differ in their difficulties and required career choice readiness.

Our second hypothesis implied that students in different phases of the career decision-making process would also consider different numbers of career options, with students about to engage in phase three (reducing alternatives for further exploration) considering the largest number. Contrary to our expectation, however, students engaging in phase four (deciding among a few alternatives) reported the most options. This result is rather surprising since students engaging this phase should already have reduced their career options in the earlier phase. One possible explanation for this finding could be that there is an additional state in the career decision-making process in our group of adolescents which is not included in our model: Students classified in phase three might actually be in a phase where they have already generated some concrete options as expected from phase two. However, they might still feel the need to further expand their options – possibly because they believe that even more promising alternatives can still be found. Hence, phase two might actually consist of two sub-phases: a) generating some general ideas about one's vocational future, and b) thoroughly exploring one's possibilities. Phase four would then be about reducing the alternatives – which seems to be equal to deciding among the alternatives for our subjects. Hence, the distinction between reducing and deciding as implied by our model and others (e.g., Gati & Asher, 2001; Peterson et al., 1991) might not be found in career decision-making of Swiss adolescents. Considering the rather small number of considered career options, this finding seems very plausible. If these assumptions are true they would imply that students classified

as engaging in phase three are actually in need of expanding their currently considered career options with more concrete alternatives. For some of them it might be premature to start reducing their options to a smaller number. Students classified as engaging in phase four, however, could be expected to have enough ideas about possible career paths. They are in need of deciding among them and thus reducing the range of considered options. One needs to keep in mind, however, that the actual number of considered career options was generally rather small within our sample. There also exists a large variance among the number of considered career option within each phase. Thus, the number of considered career options might not be connected to the actual phase in career decision-making for each student in the same way.

Another, more technical explanation for the failure to confirm our model for phase three and four is the fact the naming a current career aspiration requires two things: (1) knowing a preferred alternative, and (2) being able to label the alternative with a specific name. It could therefore be that students who report “there are so many interesting career options that I don’t know which would be best suited for me” (phase three) are indeed overwhelmed by their sheer possibilities but are unable to specifically name many of them. Students in the next phase already have a clearer picture of their possibilities and are therefore also able to name more possible options without the feeling of being confused by too many alternatives.

Gender Differences in Career Choice Readiness and Phase of Career Decision-Making

Previous research has not been able to build a homogenous picture of gender differences in career choice readiness (see Patton & Lokan, 2001, for an overview). Our analysis did not show any significant difference between male and female students regarding any of the measured constructs of career choice readiness. The students in our sample also did not differ in their average phase of career decision-making.

We did, however, find gender differences concerning the distribution among the six phases of the career decision-making process. Our results show that the differences between boys in the state of career decision-making are much larger than between girls. While quite a number of male students have no idea yet what to do after finishing school, about the same number of their colleagues are already firmly decided. Girls on the other hand more seldom report complete certainty about their future while at the same time also more seldom reporting to have no idea about it. However, the differences between boys and girls for the distribution between phase one and phase two seems not to be based on actual differences in the degree of career development. As explained above, our study could not confirm the model for phases one and two. Hence, girls more frequently categorize themselves in phase two while boys more often categorize themselves in phase one – regardless of their actual degree of career choice readiness. The reason for this difference in labeling could be a topic of further investigation.

One possible explanation for the larger differences in career development among boys could be that for some male students deciding on a vocation is quite easy because they can follow a tradition career path as many of their fathers and male relatives have done. At the same time, maybe because of the generally later physical and cognitive development of boys at that age (cf. Galambos, 2004), other boys show only minor career choice readiness and have no plans for their future yet. Girls, on the other hand, face a more complex situation in their career development. They face more circumscribed vocational possibilities within the traditional female occupations than do boys within traditional male occupations (Swiss Federal Statistical Office, March, 30th, 2005). Some of them might also feel a potential conflict between their future role as mother and housewives and vocational professionals. So, for girls career choice seems more demanding and there are often no easy traditional career

paths to follow. This might result in the finding that girls show more difficulties to become firmly decided.

Strengths and Limitations of the Study

Research on career decision-making is predominantly conducted with (American) college students and (more seldom) high-school students. Studies using samples of secondary students and with different cultural background are much less frequent. A major strength of our study therefore lies in its sample of a diverse group of secondary students outside of the American educational system. Within the Swiss education system, secondary students do actually have to make a real career choice in grade nine. Thus, for our sample career decision-making was something with imminent importance. Of course, this specific sample also implies caution on generalizing our findings to other groups. Further studies could test our model with students who are in different grades or within different educational systems.

Our six-phase model has the advantage of incorporating important aspects of several prominent models of career decision-making. Hence, it seems a promising approach for empirically exploring the career decision-making process of adolescents.

One shortcoming of the study is the failure to confirm the proposed six-phase model of career decision-making for phases one and two. As already explained above, it could be that the two phases should actually be regarded as only one phase in practice within which students do not significantly differ in their career choice readiness or considered career options. Another possibility is that phase one which lies prior to actual career decision-making is just not viable for a career decision-making model. It might, however, also be that our operationalization of phase one and two were not successful and that the items to tap these phases should have been worded differently. In any case, there seems to be need for further investigation into the viability and validity of phase one and phase two in our model.

Another limitation of the study is its failure to confirm the model regarding the development of considered career alternatives for phase three and four. These findings might imply that while our six-phase model seems justified as a prescriptive model of career decision-making, it might not be completely valid as a descriptive model. Methodologically, we chose a free-listing form for asking students about their currently considered career options, since this method is useful in eliciting individually considered career options of a student. However, for students who have difficulties in naming their career options by a specific term, as could have been the case for students in phase three, this method could result in less reported career options than actually considered. To validate our model for phase three and four, presenting students a list with several popular vocations to choose amongst might have been a better way to measure the actual number of considered career alternatives. Future studies should try to test this assumption.

Although very common in research about career decision-making, one limitation with our applied measures is the fact that we only applied self-report measures which may limit the validity of our conclusions. Specifically, we did not measure the actual knowledge of the world of work or the skills of students in career decision-making which could also be regarded as important aspects of career choice readiness (e.g., cf. Super & Overstreet, 1960). The current phase in career decision-making was also measured by self-estimation which might limit its validity. Another possible approach to estimate the current state in career decision-making would be to measure the actual behaviors a student has undertaken so far and the ones he or she is currently performing. On a more general level, our study is based on a convenience sample of students and not on actual counseling clients. Also, the study was cross-sectional, which limits its possibility to actually confirm the sequential order of the model over time. Longitudinal studies are needed for this purpose.

Implications for Theory and Practice

Overall, our study shows that our sequential six-phase model of career decision-making is a promising concept for describing and guiding the career decision-making process of students. For career education in schools our results imply that even students in grade seven show a considerable variance in their current state of career decision-making and career development. In fact, quite a number of students reported that they are already partially or even firmly decided about a certain career path. In Switzerland, career education officially only starts in grade eight and seems to assume that all students enter this process with the same background and mostly unaware of their existing options. Based on our results we would propose that school curriculums try to better incorporate the already existing aspirations of the students and be more adaptive to the individual phase in the career decision-making process of the students.

Practitioners in career counseling might use our model and our measure of it as a fast and simple way to evaluate which phase of the career decision-making process a student currently is in. Counselors can then assist students in making their first career choice by guiding them along a the phases of our model by increasing their career choice readiness in terms of more career planning, becoming more aware of one's own interests, skills, and values and becoming more decided and committed towards a career choice. In applying more dynamic decision-making models (cf. Van Esbroeck et al., 2005), practitioners should be aware that the different phases might not be interchangeable and should take the actual career choice readiness of the student into account when deciding with which phase to start the counseling process.

Our study also shows that students differ in their amount of career choice readiness as they are in different phases of the process. As for the four basic counseling goals identified by Brown and colleagues (Brown & McPartland, 2005; Miller & Brown, 2005), this implies that

students reporting different needs in their career decision-making process can also be expected to show different degrees of career choice readiness. This means that by noticing the needs and goals of students in career counseling, counselors can not only determine which kind of intervention would be best suited for a specific client, but they can also make implications concerning the career choice readiness of the students and thus about the intensity of the required intervention.

References

Bergmann, C. (1993). Differenziertheit der Interessen und berufliche Entwicklung [Differentiation of interests and vocational development]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 14*, 265-279.

Blustein, D. L. (1988). A canonical analysis of career choice crystallization and vocational maturity. *Journal of Counseling Psychology, 35*, 297-300.

Blustein, D. L. (1997). A context-rich perspective on career exploration across life roles. *Career Development Quarterly, 45*, 260-274.

Blustein, D. L., Phillips, S. D., Jobin-Davis, K., Finkelberg, S. L., & Roarke, A. E. (1997). A theory building investigation of the school-to-work transition. *Counseling Psychologist, 25*, 364-402.

Brown, D. (1990). Models of career decision making. In D. Brown & L. Brooks (Eds.), *Career choice and development* (2nd ed., pp. 395-421). San Francisco, CA: Jossey-Bass Publishers.

Brown, S. D., & McPartland, E. B. (2005). Career interventions: Current status and future directions. In W. B. Walsh & M. L. Savickas (Eds.), *Handbook of vocational psychology: Theory, research, and practice* (3rd ed., pp. 195-226). Mahwah, NJ: Lawrence Erlbaum Associates.

Cohen, J. (1969). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

Creed, P. A., & Patton, W. (2003). Predicting two components of career maturity in school based adolescents. *Journal of Career Development, 29*, 277-290.

Creed, P. A., Prideaux, L.-A., & Patton, W. (2005). Antecedents and consequences of career decisional states in adolescence. *Journal of Vocational Behavior, 67*, 397-412.

Crites, J. O. (1973). *Theory and research handbook for the Career Maturity Inventory*. Monterey, CA: CTB/McGraw Hill.

Flum, H., & Blustein, D. L. (2000). Reinvigorating the study of vocational exploration: A framework for research. *Journal of Vocational Behavior, 56*, 380-404.

Galambos, N. L. (2004). Gender and gender role development in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 233-262). Hoboken, NJ: John Wiley & Sons, Inc.

Gati, I. (1986). Making career decisions - A sequential elimination approach. *Journal of Counseling Psychology, 33*, 408-417.

Gati, I., & Asher, I. (2001). The PIC model for career decision making: Prescreening, in-depth exploration, and choice. In F. T. Leong & A. Barak (Eds.), *Contemporary models in vocational psychology* (pp. 7-54). Mahwah, NJ: Lawrence Erlbaum Associates.

Gati, I., Kleiman, T., Saka, N., & Zakai, A. (2003). Perceived benefits of using an Internet-based interactive career planning system. *Journal of Vocational Behavior, 62*, 272-286.

Gati, I., Saka, N., & Krausz, M. (2001). "Should I use a computer-assisted career guidance system?" It depends on where your career decision-making difficulties lie. *British Journal of Guidance and Counselling, 29*, 301-321.

Gati, I., Shenhav, M., & Givon, M. (1993). Processes involved in career preferences and compromises. *Journal of Counseling Psychology, 40*, 53-64.

Germeijs, V., & Verschueren, K. (2006). High school students' career decision-making process: Development and validation of the Study Choice Task Inventory. *Journal of Career Assessment, 14*, 449-471.

Grotevant, H. D., Cooper, C. R., & Kramer, K. (1986). Exploration as a predictor of congruence in adolescents' career choices. *Journal of Vocational Behavior, 29*, 201-215.

Halpern, D. F. (2000). *Sex differences in cognitive abilities* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Hartung, P. J., Porfeli, E. J., & Vondracek, F. W. (2005). Child vocational development: A review and reconsideration. *Journal of Vocational Behavior, 66*, 385-419.

Hirschi, A., & Werlen Lutz, C. (submitted). Berufswahlbereitschaft und Erfolg bei der Lehrstellensuche: Der Einfluss von Planung, Exploration, Entschiedenheit und beruflicher Identität. [Career choice readiness and success in finding an apprenticeship: The influence of planfulness, exploration, decidedness, and vocational identity]. *Zeitschrift für Pädagogische Psychologie*.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.

Holland, J. L., Daiger, D. C., & Power, P. G. (1980). *My Vocational Situation*. Palo Alto, CA: Consulting Psychologists Press.

Jepsen, D. A., & Dickson, G. L. (2003). Continuity in life-span career development: Career exploration as a precursor to career establishment. *Career Development Quarterly, 51*, 217-234.

Jörin, S., Stoll, F., Bergmann, C., & Eder, D. (2004). *Explorix® - das Werkzeug zur Berufswahl und Laufbahnplanung [Explorix - the Tool for Career Choice and Career Planning]*. Bern: Hans Huber.

Lucas, E. B., Gysbers, N. C., Buescher, K. L., & Heppner, P. P. (1988). My Vocational Situation: Normative, psychometric, and comparative data. *Measurement and evaluation in counseling and development, 20*, 162-170.

Miller, M. J., & Brown, S. D. (2005). Counseling for career choice: Implications for improving interventions and work with diverse populations. In S. D. Brown & R. W. Lent (Eds.), *Career Development and Counseling* (pp. 441-465). Hoboken, NJ: Wiley & Sons Inc.

Patton, W., & Creed, P. A. (2001). Perspectives on Donald Super's construct of career maturity. *International Journal of Educational and Vocational Guidance, 1*, 1-18.

Peterson, G. W., Sampson, J. P., Jr., & Reardon, R. C. (1991). *Career development and services: A cognitive approach*. Pacific Grove, CA: Brooks/Cole.

Phillips, S. D. (1982). The development of career choices: The relationship between patterns of commitment and career outcomes in adulthood. *Journal of Vocational Behavior, 20*, 141-152.

Phillips, S. D., & Jome, L. M. (2005). Vocational choices: What do we know? What do we need to know? In W. B. Walsh & M. L. Savickas (Eds.), *Handbook of Vocational Psychology: Theory, Research, and Practice* (3rd ed., pp. 127-153). Mahwah, NJ: Lawrence Erlbaum Associates.

Powell, D. F., & Luzzo, D. A. (1998). Evaluating factors associated with the career maturity of high school students. *Career Development Quarterly, 47*, 145-149.

Raskin, P. M. (1998). Career maturity: The construct's validity, vitality, and viability. *Career Development Quarterly, 47*, 32-35.

Sampson, J. P., Jr., Reardon, R. C., Peterson, G. W., & Lenz, J. G. (2004). *Career counseling and services: A cognitive information processing approach*. Pacific Grove, CA: Brooks/Cole.

Saunders, D. E., Peterson, G. W., Sampson, J. P., Jr., & Reardon, R. C. (2000). Relation of depression and dysfunctional career thinking to career indecision. *Journal of Vocational Behavior, 56*, 288-298.

Savickas, M. L. (1984). Career maturity: The construct and its appraisal. *Vocational Guidance Quarterly, 32*, 222-231.

Savickas, M. L. (1985). Identity in vocational development. *Journal of Vocational Behavior, 27*, 329-388.

Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *Career Development Quarterly, 45*, 247-259.

Savickas, M. L. (1999). The transition from school to work: A developmental perspective. *Career Development Quarterly, 47*, 326-336.

Savickas, M. L. (2000). Assessing career decision making. In E. Watkins & V. Campbell (Eds.), *Testing and assessment in counselling practice* (2nd ed., pp. 429-477). Hillsdale, NJ: Erlbaum.

Savickas, M. L. (2001). Toward a comprehensive theory of career development: dispositions, concerns, and narratives. In F. T. L. Leong & A. Barak (Eds.), *Contemporary models in vocational psychology: A volume in honor of Samuel H Osipow* (pp. 295-320). Mahwah, NJ: Lawrence Erlbaum Associates.

Savickas, M. L., Silling, S. M., & Schwartz, S. (1984). Time perspective in vocational maturity and career decision making. *Journal of Vocational Behavior, 25*, 258-269.

Seifert, K. H. (1983). Berufswahlreife [Career maturity]. *Berufsberatung und Berufsbildung, 68*, 233-251.

Seifert, K. H. (1993). Zur prädikativen Validität von Berufswahlreifeinstrumenten [On the predictive validity of career maturity measures]. *Zeitschrift für Arbeits- und Organisationspsychologie, 4*, 172 - 182.

Seifert, K. H., Bergmann, C., & Eder, F. (1987). Berufswahlreife und Selbstkonzept-Berufskonzept-Kongruenz als Prädiktor der beruflichen Anpassung und Bewährung während der beruflichen Ausbildung [Career maturity and self-concept-vocation-concept congruence as a predictor for vocational adaption and success in vocational education]. *Zeitschrift für Arbeits- und Organisationspsychologie, 31*, 133-143.

Seifert, K. H., & Eder, F. (1985). Der Fragebogen zur Laufbahnentwicklung [Questionnaire on Career Development]. *Zeitschrift für Differenzielle und Diagnostische Psychologie, 6*, 65-77.

Seifert, K. H., & Eder, F. (1991). Berufswahl und berufliche Bewährung und Anpassung während der beruflichen Ausbildung [Career choice and vocational success and adaption during vocational education]. *Zeitschrift für Pädagogische Psychologie, 5*, 187 - 200.

Seifert, K. H., & Stangl, W. (1986). Der Fragebogen Einstellung zur Berufswahl und beruflichen Arbeit [Questionnaire on Attitudes towards Career Choice and Work]. *Diagnostica, 32*, 153-164.

Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 197-262). San Francisco, CA: Jossey-Bass.

Super, D. E., & Overstreet, P. L. (1960). *The vocational maturity of ninth-grade boys*. New York: Teachers College, Columbia University.

Super, D. E., Thompson, A. S., Lindeman, R. H., Jordaan, J.-P., & Myers, R. A. (1981). *Career Development Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Swiss Federal Statistical Office. (March, 30th, 2005). *Berufliche Grundbildung 2005 [Vocational Education 2005]*. Neuchatel: Author.

Tibos, K., & van Esbroeck, R. (2003, September). *Career Choice Development Profile Questionnaire: An initial evaluation*. Paper presented at the Congress of the International Association for Education and Vocational Guidance, Berne, Switzerland.

Van Esbroeck, R., Tibos, K., & Zaman, M. (2005). A dynamic model of career choice development. *International Journal of Educational and Vocational Guidance, 5*, 5-18.

Watson, M., & McMahon, M. (2005). Children's career development: A research review from a learning perspective. *Journal of Vocational Behavior, 67*, 119-132.

Figure Captions

Figure 1. Six-Phase Model of the Career Decision-Making Process

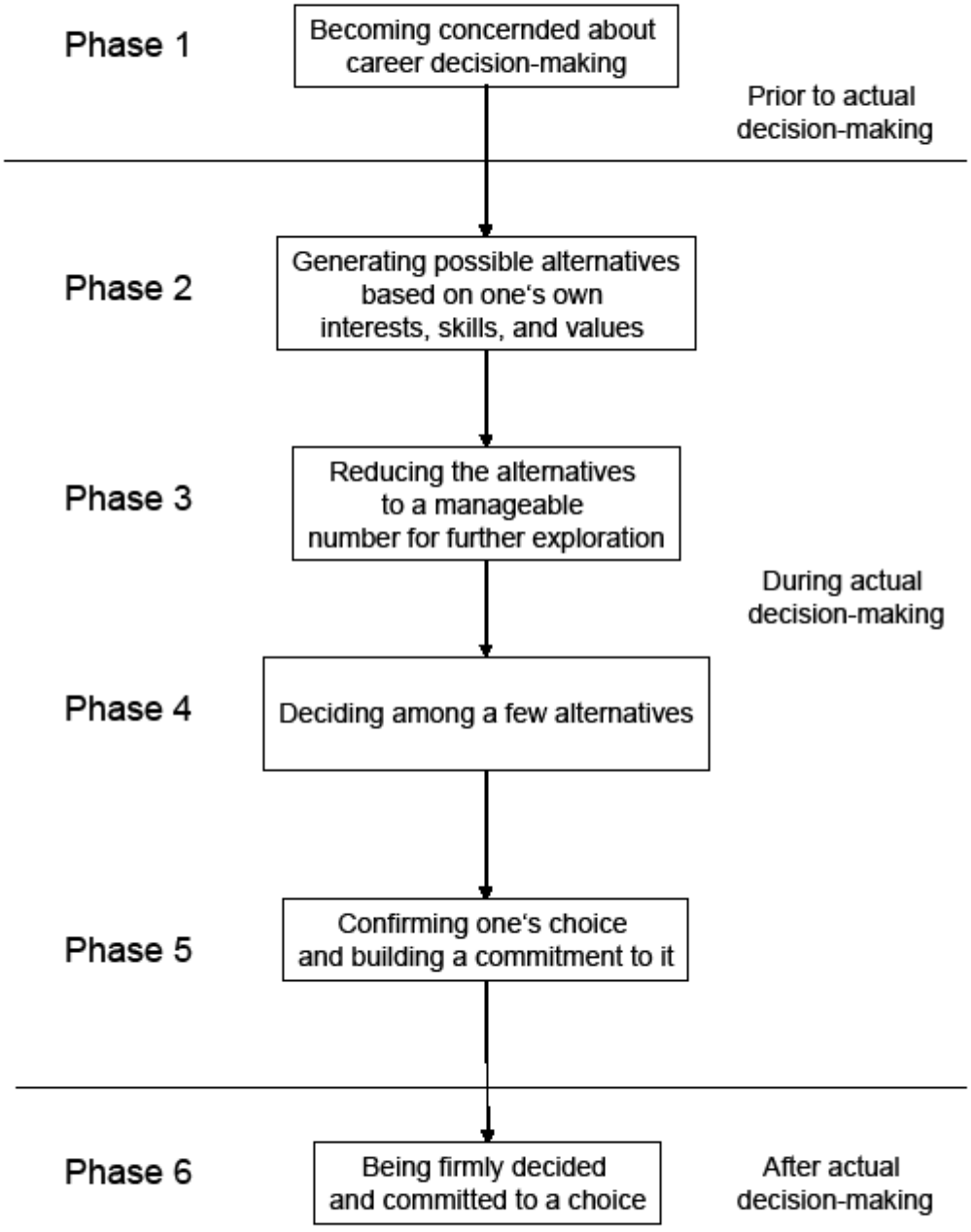
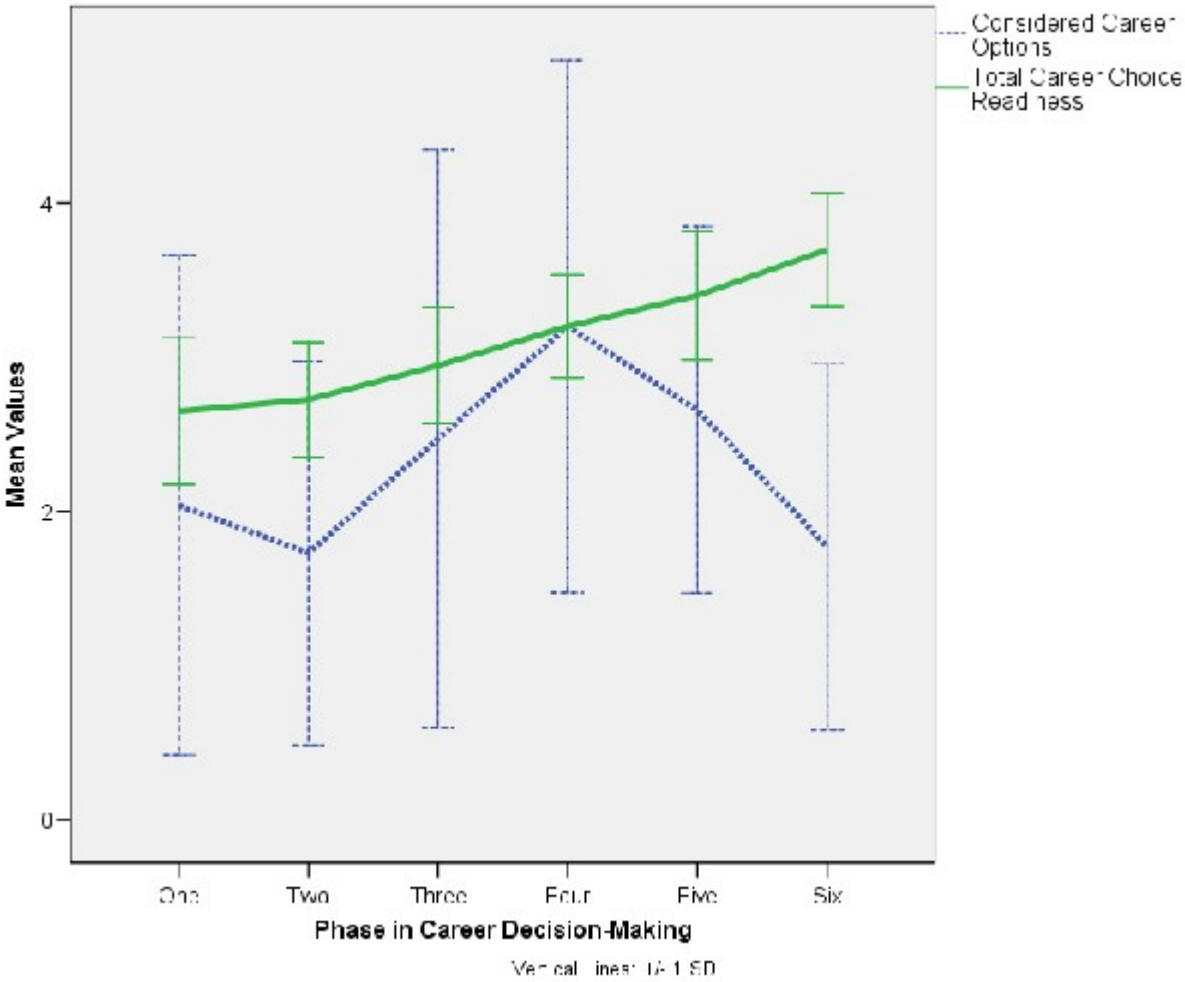


Figure 2. Considered Career Options and Total Career Choice Readiness across the Six Phases



Tables

Table 1

Means, Standard Deviations, and Intercorrelations among the Measured Variables

Variable	1	2	3	4	5	6	7
1. Career Options[1]							
2. Career Decidedness[1]	.120						
3. Career Planning[1]	.167***	.605***					
4. Career Exploration[1]	.090	.168**	.390***				
5. Vocational Identity[1]	.048	.798***	.553***	.110			
6. Total Career Choice Readiness[1]	.126***	.878***	.822***	.482***	.846***		
7.Phase in Career Decision-Making[2]	.142*	.618***	.477***	.196***	.602***	.636***	
M	2.42	2.68	2.93	3.06	3.26	3.13	
SD	1.56	0.55	0.62	0.53	0.74	0.51	

Note: [1] Pearson, [2] Spearman

* $p \leq .05$, ** $p \leq .01$, $p \leq .001$

Table 2

Comparison of Students in Different Phases of the Career Decision-Making Process Regarding Their Degree of Career Choice Readiness

	Phase 1				**Phase 2**				**Phase 3**			
	(N=25)		**2 vs. 1**		**(N=41)**		**3 vs. 2**		**(N=56)**		**4 vs. 3**	
	M	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*
CO	*2.04*	*1.60*	*-0.9*	*-0.19*	*1.73*	*1.20*	*2.2**	*0.45*	*2.40*	*1.9*	*2.0**	*0.52*
CD	*2.27*	*0.57*	*0.2*	*0.05*	*2.29*	*0.40*	*1.3*	*0.20*	*2.40*	*0.44*	*4.0****	*0.65*
CP	*2.25*	*0.65*	*-1.6*	*-0.04*	*2.49*	*0.52*	*3.0***	*0.51*	*2.81*	*0.52*	*2.0**	*0.33*
CE	*2.72*	*0.62*	*1.8**	*0.50*	*2.98*	*0.54*	*1.2*	*0.25*	*3.11*	*0.55*	*0.6*	*0.13*
VID	*2.68*	*0.66*	*0.2*	*0.05*	*2.72*	*0.52*	*2.1**	*0.31*	*2.95*	*0.56*	*3.8****	*0.61*
TCCR	*2.65*	*0.48*	*0.7*	*0.16*	*2.73*	*0.37*	*2.9***	*0.44*	*2.95*	*0.38*	*3.4****	*0.49*

	Phase 4				**Phase 5**				**Phase 6**	
	(N=40)		**5 vs. 4**		**(N=82)**		**6 vs. 5**		**(N=22)**	
	M	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*	*M*	*SD*
CO	*3.20*	*1.70*	*-1.8**	*-0.32*	*2.66*	*1.20*	*-3.1****	*-0.58*	*1.77*	*1.20*
CD	*2.76*	*0.41*	*2.8***	*0.41*	*2.98*	*0.42*	*3.0***	*0.54*	*3.28*	*0.35*
CP	*3.01*	*0.48*	*1.7**	*0.29*	*3.19*	*0.55*	*1.6*	*0.34*	*3.41*	*0.58*
CE	*3.04*	*0.48*	*1.2*	*0.22*	*3.16*	*0.48*	*0.0*	*0.01*	*3.16*	*0.51*
VID	*3.40*	*0.59*	*1.8**	*0.28*	*3.61*	*0.60*	*4.0****	*0.78*	*4.19*	*0.60*
TCCR	*3.20*	*0.33*	*2.7***	*0.40*	*3.40*	*0.42*	*3.0***	*0.59*	*3.70*	*0.37*

Note. CO: Career Options, *CD*: Career Decidedness, *CP*: Career Planning, *CE*: Career Exploration, *VID*: Vocational Identity, *TCCR*: Total Career Choice Readiness

Significance (1-tailed) * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 3

Number of Students in the Six Phases of the Career Decision-Making Process.

Phase	*1*	*2*	*3*	*4*	*5*	*6*
all students	25	41	56	40	82	22
(N = 266)	(9.4%)	(15.4%)	(21.1%)	(15.0%)	(30.8%)	(8.3%)
only males	19	14	29	18	35	19
(N = 134)	(14.2%)	(10.4%)	(21.6%)	(13.4%)	(26.1%)	(14.2%)
only females	3	27	27	22	47	3
(N = 132)	(4.5%)	(20.5%)	(20.5%)	(16.7%)	(35.6%)	(2.3%)